



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/505,145

04/08/2005

Steven Peter Colliver

056159-5241

9553

9629 7590 04/11/2008
MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

KALLIS, RUSSELL

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

04/11/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/505,145	Applicant(s) COLLIVER ET AL.	
	Examiner RUSSELL KALLIS	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,22-25,28-31 and 34-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,22-25,28-31 and 34-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-2, 22-25, 28-31 and 34-39 are pending and examined.

Claim Rejections - 35 USC § 102

Claims 1-2, 22-25, 28-31 and 34-39 remain rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,038,113 filed March 8, 1999. This rejection is maintained for the reasons of record set forth in the Official action mailed 10/18/2007. Applicant's arguments filed 1/18/2007 have been considered but are not deemed persuasive.

Applicant asserts that the claims now recite limitations not found in the prior art reference and recites "a plant active in flavanol and anthocyanin biosynthesis", "a fragment of SEQ ID NO: 2 having chalcone reductase activity", "a fragment of SEQ ID NO: 4 having isoflavone synthase activity", and "a fragment of SEQ ID NO: 6 catalyzing 4, 2',4'-trihydroxychalcone (i.e. 2',4,4'-trihydroxychalcone) to 7,4'-dihydroxyflavanone (i.e. liquiritigenin)" (response page 6).

This is not persuasive because the claims are broadly drawn to unspecified fragments of unspecified length and identity of heterologous isoflavone synthase, chalcone reductase and chalcone isomerase that retain activity and are not distinguished from those already known in the prior art. Examples of the work of R.A. Dixon an inventor of the prior art '113 patent prior to the instant filing are provided as evidence in support of the argument supra.

RESULT 1
US-09-936-190-1
; Sequence 1, Application US/09936190
; Patent No. 7038113
; GENERAL INFORMATION:
; APPLICANT: STEELE, Christopher L.
; APPLICANT: DIXON, Richard A.
; TITLE OF INVENTION: GENETIC MANIPULATION OF ISOFLAVONOID
; FILE REFERENCE: 11137/05006
; CURRENT APPLICATION NUMBER: US/09/936,190

Art Unit: 1638

; CURRENT FILING DATE: 2001-09-13
; PRIOR APPLICATION NUMBER: 60/123,267
; PRIOR FILING DATE: 1999-03-08
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 1
; LENGTH: 1717
; TYPE: DNA
; ORGANISM: Glycine max
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (36)..(1598)
US-09-936-190-1

Query Match 98.7%; Score 1546.8; DB 5; Length 1717;
Best Local Similarity 99.2%; Pred. No. 0;
Matches 1554; Conservative 0; Mismatches 12; Indels 0; Gaps
0;

Qy 1 ATGGTGCTTGAACCTGCACTTGGTTTATTGGTTTTGGCTCTGTTTCTGCACTTGCCTCCC 60
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 36 ATGTTGCTTGAACCTGCACTTGGTTTATTGGTTTTGGCTCTGTTTCTGCACTTGCCTCCC 95

Qy 61 ACACCCACTGCAAAATCAAAAGCACTTCGCCATCTCCCAAACCCACCAAGCCCAAAGCCT
120
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 96 ACACCCACTGCAAAATCAAAAGCACTTCGCCATCTCCCAAACCCACCAAGCCCAAAGCCT
155

Qy 121 CGTCTTCCCTTCATAGGACACCTTCATCTCTTAAAAGACAAACTTCTCCACTACGCACTC
180
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 156 CGTCTTCCCTTCATAGGACACCTTCATCTCTTAAAAGACAAACTTCTCCACTACGCACTC
215

Qy 181 ATCGACCTCTCCAAAAACATGGTCCCTTATTCTCTCTCTACTTTGGCTCCATGCCAACC
240
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 216 ATCGACCTCTCCAAAAACATGGTCCCTTATTCTCTCTCTACTTTGGCTCCATGCCAACC
275

Qy 241 GTTGTTCCTCCACACCAGAATTGTTCAAGCTCTTCCTCCAAACGCACGAGGCAACTTCC
300
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 276 GTTGTTCCTCCACACCAGAATTGTTCAAGCTCTTCCTCCAAACGCACGAGGCAACTTCC
335

Qy 301 TTCAACACAAGGTTCCAAACCTCAGCCATAAGACGCCTCACCTATGATAGCTCAGTGGCA
360
||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 336 TTCAACACAAGGTTCCAAACCTCAGCCATAAGACGCCTCACCTATGATAGCTCAGTGGCC
395

Art Unit: 1638

Qy 420	361	ATGGTTCCCTTCGGGGCCCTACTGGAAGTTCGTGAGGAAGCTCATCATGAACGACCTTCTC
Db 455	396	ATGGTTCCCTTCGGACCTTACTGGAAGTTCGTGAGGAAGCTCATCATGAACGACCTTCTC
Qy 480	421	AACGCCACCACTGTAAACAAGTTGAGGCCTTTGAGGACCCAACAGACGCGTAAGTTCCTT
Db 515	456	AACGCCACCACTGTAAACAAGTTGAGGCCTTTGAGGACCCAACAGATCCGCAAGTTCCTT
Qy 540	481	AGGGTTATGGCCCAAGGCGCAGAGGCACAGAAGCCCCTTGACTTGACCGAGGAGCTTCTG
Db 575	516	AGGGTTATGGCCCAAGGCGCAGAGGCACAGAAGCCCCTTGACTTGACCGAGGAGCTTCTG
Qy 600	541	AAATGGACCAACAGCACCATCTCCATGATGATGCTCGGCGAGGCTGAGGAGATCAGAGAC
Db 635	576	AAATGGACCAACAGCACCATCTCCATGATGATGCTCGGCGAGGCTGAGGAGATCAGAGAC
Qy 660	601	ATCGCTCGCGAGGTTCTTAAGATCTTTGGCGAATACAGCCTCACTGACTTCATCTGGCCA
Db 695	636	ATCGCTCGCGAGGTTCTTAAGATCTTTGGCGAATACAGCCTCACTGACTTCATCTGGCCA
Qy 720	661	TTGAAGCATCTCAAGGTTGGAAGATATGAGAAGAGGATCGACGACATCTTGAACAAGTTC
Db 755	696	TTGAAGCATCTCAAGGTTGGAAGATATGAGAAGAGGATCGACGACATCTTGAACAAGTTC
Qy 780	721	GACCCTGTCGTTGAAAGGGTCATCAAGAAGCGCCGTGAGATCGTGAGGAGGAGAAAGAAC
Db 815	756	GACCCTGTCGTTGAAAGGGTCATCAAGAAGCGCCGTGAGATCGTGAGGAGGAGAAAGAAC
Qy 840	781	GGAGAGGTTGTTGAGGGTGAGGTCAGCGGGGTTTTTCCTTGACACTTTGCTCGAGTTCGCT
Db 875	816	GGAGAGGTTGTTGAGGGTGAGGTCAGCGGGGTTTTTCCTTGACACTTTGCTTGAATTCGCT
Qy 900	841	GAGGATGAGACTATGGAGATCAAAATCACCAAGGACCACATCAAGGGTCTTGTTGTAGAC
Db 935	876	GAGGATGAGACCATGGAGATCAAAATCACCAAGGACCACATCAAGGGTCTTGTTGTAGAC

Art Unit: 1638

Qy 960	901	TTTTTCTCGGCAGGAACAGACTCAACAGCGGTGGCAACAGAGTGGGCATTGGCAGAACTC
Db 995	936	TTTTTCTCGGCAGGAACAGACTCCACAGCGGTGGCAACAGAGTGGGCATTGGCAGAACTC
Qy 1020	961	ATCAACAATCCTAAGGTGTTGGAAAAGGCTCGTGAGGAGGTCTACAGTGTTGTGGGAAAG
Db 1055	996	ATCAACAATCCTAAGGTGTTGGAAAAGGCTCGTGAGGAGGTCTACAGTGTTGTGGGAAAG
Qy 1080	1021	GACAGACTTGTGGACGAAGTTGACACTCAAAACCTTCCTTACATTAGAGCAATCGTGAAG
Db 1115	1056	GACAGACTTGTGGACGAAGTTGACACTCAAAACCTTCCTTACATTAGAGCAATCGTGAAG
Qy 1140	1081	GAGACATTCCGCATGCACCCGCCACTCCCAGTGGTCAAAAGAAAGTGCACAGAAGAGTGT
Db 1175	1116	GAGACATTCCGCATGCACCCGCCACTCCCAGTGGTCAAAAGAAAGTGCACAGAAGAGTGT
Qy 1200	1141	GAGATTAATGGATATGTGATCCCAGAGGGAGCATTGATTCTCTTCAATGTATGGCAAGTA
Db 1235	1176	GAGATTAATGGATATGTGATCCCAGAGGGAGCATTGATTCTCTTCAATGTATGGCAAGTA
Qy 1260	1201	GGAAGAGACCCCAAATACTGGGACAGACCATCGGAGTTCCGTCTTGAGAGGTTCTTAGAG
Db 1295	1236	GGAAGAGACCCCAAATACTGGGACAGACCATCGGAGTTCCGTCTTGAGAGGTTCTTAGAG
Qy 1320	1261	ACAGGGGCTGAAGGGGAAGCAGGGCCTCTTGATCTTAGGGGACAACATTTTCAACTTCTC
Db 1355	1296	ACAGGGGCTGAAGGGGAAGCAGGGCCTCTTGATCTTAGGGGACAACATTTTCAACTTCTC
Qy 1380	1321	CCATTTGGGTCTGGGAGGAGAATGTGCCCTGGAGTCAATCTGGCTACTTCGGGAATGGCA
Db 1415	1356	CCATTTGGGTCTGGGAGGAGAATGTGCCCTGGAGTCAATCTGGCTACTTCGGGAATGGCA
Qy 1440	1381	ACACTTCTTGCACTCTCTTATTCAGTGCTTCGACTTGCAAGTGCTGGGTCCACAAGGACAG
Db 1475	1416	ACACTTCTTGCACTCTCTTATTCAGTGCTTCGACTTGCAAGTGCTGGGTCCACAAGGACAG

Art Unit: 1638

```

Qy      1441 ATATTGAAGGGTGGTGACGCCAAAGTTAGCATGGAAGAGAGAGCCGGCCTCACTGTTCCA
1500
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1476 ATATTGAAGGGTGGTGACGCCAAAGTTAGCATGGAAGAGAGAGCCGGCCTCACTGTTCCA
1535

Qy      1501 AGGGCACATAGTCTTGTCTGTGTTCCACTTGCAAGGATCGGCGTTGCATCTAAACTCCTT
1560
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1536 AGGGCACATAGTCTTGTCTGTGTTCCACTTGCAAGGATCGGCGTTGCATCTAAACTCCTT
1595

Qy      1561 TCTTAA 1566
          |||||
Db      1596 TCTTAA 1601

```

RESULT 2

MSU13925

LOCUS MSU13925 1122 bp mRNA linear PLN 30-JAN-1997

DEFINITION Medicago sativa Apollo clone CHR7 chalcone reductase (CHR) mRNA, complete cds.

ACCESSION U13925

VERSION U13925.1 GI:537297

KEYWORDS .

SOURCE Medicago sativa

ORGANISM Medicago sativa
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core
eudicotyledons;

rosids; eurosids I; Fabales; Fabaceae; Papilionoideae;

Trifolieae;

Medicago.

REFERENCE 1 (bases 1 to 1122)

AUTHORS Ballance,G.M. and Dixon,R.A.

TITLE Medicago sativa cDNAs encoding chalcone reductase

JOURNAL Plant Physiol. 197, 1027-1028 (1995)

REFERENCE 2 (bases 1 to 1122)

AUTHORS Ballance,G.M.

TITLE Direct Submission

JOURNAL Submitted (23-AUG-1994) G. Murray Ballance, Department of Plant
Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2,

Canada

FEATURES Location/Qualifiers
source 1. .1122
/organism="Medicago sativa"
/mol_type="mRNA"
/cultivar="Apollo"
/sub_species="sativa"

Art Unit: 1638

```

        /db_xref="taxon:3879"
        /clone="CHR7"
        /cell_type="suspension cells"
        /clone_lib="lambda ZapII library, Gowri et al., Plant
gene      1. .1122
        /gene="CHR"
CDS      48. .986
        /gene="CHR"
        /function="coacts with chalcone synthase to produce
        6'-deoxychalcone; In the chalcone synthase-generated
        polyketide intermediate, the oxygen function which would
        produce the 6'-hydroxyl of the naringenin chalcone, is
        reduced by CHR and eliminated as water prior to ring
        cyclization to form 6'-deoxychalcone."
        /codon_start=1
        /product="chalcone reductase"
        /protein_id="AAB41556.1"
        /db_xref="GI:537298"

/translation="MGSVEIPTKVLTTNTSSQLKMPVVGMSAPDFTCKKDTKDAIEA
IKQGYRHFDTAAAYGSEQALGEALKEAIELGLVTREELFVTSKLWVTENHPHLVIPAL
QKSLKTLQLDYLDLYLIHWPLSSQPGKFSFPIDVADLLPFDVKGVWESMEESLKLGLT
KAIGVSNFSVKLENLLSVATVLPVAVNQVEMNLAWQQKKLREFCNANGIVLTAFSPLR
KGASRGPNEVMENDMLKEIADAHGKSVAQISLRWLYEQGVTFVPKSYDKERMNQNLCI
        FDWSLTKEDHEKIDQIKQNRLIPGPTKPLNDLYDD"
polyA_signal      1094. .1099
        /gene="CHR"
polyA_site      1122
        /gene="CHR"
        /experiment="experimental evidence, no additional
details
        recorded"
        /note="20 A nucleotides"
ORIGIN

Query Match      83.9%; Score 793.6; DB 4; Length 1122;
Best Local Similarity 90.0%; Pred. No. 3.2e-224;
Matches 850; Conservative 0; Mismatches 94; Indels 0; Gaps
0;

Qy      1 ATGGGTAGTGTGAAATCCCAACAAAGGTGCTTACCAACACATCTGCTCAAATTAAGATG 60
        |||
Db      48 ATGGGTAGTGTGAAATCCCAACAAAGGTTCTTACCAACACATCTAGTCAATTGAAGATG
107

Qy      61 CCTGTTGTTGGAATGGGATCAGCACCTGACTTCACATGCAAGAAAGACACTAAAGAAGCA
120
        |||
```

Art Unit: 1638

Db 108 CCTGTGGTTGGAATGGGATCAGCCCCTGACTTCACATGTAAGAAAGACACAAAAGATGCA
167

Qy 121 ATCATCGAAGCCATCAAACAAGGTTACAGACACTTTGATACTGCTGCTGCTTATGGATCC
180

Db 168 ATCATTGAAGCCATCAAACAAGGTTATAGACACTTTGATACTGCTGCTGCATATGGCTCA
227

Qy 181 GAACAAGCTCTTGGTGAGGCTTTGAATGAGGCTATTCAACTTGGTCTTGTCACTAGAGAA
240

Db 228 GAACAAGCTCTTGGAGAGGCTTTGAAAGAGGCAATTGAACTTGGTCTTGTCACTAGAGAA
287

Qy 241 CAGCTTTTTGTTACTTCTAAACTTTGGGTTACTGAAAATCATCCTCACCTTGTTCCTCCT
300

Db 288 GAGCTTTTTGTTACTTCTAAACTTTGGGTCCTGAAAATCATCCTCATCTTGTATTTCCT
347

Qy 301 GCTCTACAAAATCTCTCAAGACTCTTCAGTTGGATTACTTGGATTTGTATTTGATTCAT
360

Db 348 GCTCTTCAAAAATCTCTCAAGACTCTTCAATTGGACTATTTGGACTTGTATTTGATTCAT
407

Qy 361 TGGCCACTTAGTTCTCAGCCCGGAAAGTTTTTCATTTCCAATTGATGTGGCTGATCTATTG
420

Db 408 TGGCCACTTAGCTCTCAACCTGGAAAGTTTTTCATTTCCAATTGATGTGGCAGATCTCTTG
467

Qy 421 CCATTTGATGTAAAAGGTGTGTGGGAATCCATGGAAGAGGCTTTGAGACTTGGACTCACG
480

Db 468 CCATTTGATGTGAAAGGTGTTTGGGAATCCATGGAGGAAAGCTTGAAACTTGGACTCACT
527

Qy 481 AAAGCTATTGGTGTGAGTAAGTCTCTGTCAAGAACTTCAAAGCTACTATCTGTTGCC
540

Db 528 AAAGCTATTGGAGTTAGTAAGTCTCTGTCAAGAACTTGAAAATCTTCTCTCTGTTGCC
587

Qy 541 ACTGTTCTTCCTGCTGTTAATCAAGTAGAGATGAACCTTGCATGGCAACAAAAGAAGCTA
600

Db 588 ACTGTTCTTCAGCAGTCAATCAAGTGGAAATGAACCTTGCATGGCAACAAAAGAAGCTT
647

Qy 601 AGAGAATTTTGCAATGAAAATGGAATAGTGTTGACTGCATTTTCACCGTTGAGGAAAGGC
660

Art Unit: 1638

```

Db      648 AGAGAGTTTTGCAACGCAAATGGAATAGTGTTAACTGCATTTTCACCATTGAGGAAAGGT
707

Qy      661 GCCAGCCGAGGAGCAAATGAGGTTATGGAGAATGATATGCTTAAACAGATTGCAGATGCT
720

      || ||| |||| | |||| | ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      708 GCAAGCAGAGGACCTAATGAAGTTATGGAGAATGATATGCTTAAAGAGATTGCAGATGCT
767

Qy      721 CATGGAAAGTCTATTGCACAAATTTCTCTGAGATGGTTATATGAACAAGGAATCACTTTT
780

      ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      768 CATGGAAAGTCTGTTGCACAAATATCTCTAAGATGGCTATATGAACAAGGAGTCACTTTT
827

Qy      781 GTTCCAAAGAGCTATGATAAGGAGAGAATGAGTCAAAATTTGAGAATCTTTGATTGGACA
840

      |||| | |||| | ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||
Db      828 GTTCCCAAGAGTTATGATAAGGAGAGAATGAACCAAATTTGTGTATCTTTGATTGGTCA
887

Qy      841 CTGACAAAGGAGGATCATGAGAAAATTGATCAAATTAAGCAGAATCGTTTGATCCCTGGA
900

      ||||| || | ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      888 TTGACAAAAGAAGATCATGAGAAAATCGATCAAATTAAGCAAAATCGTTTGATCCCTGGA
947

Qy      901 CCAACCAAGCCAAGTCTCAATGATCTTTGGGATGATGAAATATA 944
      ||||| ||||| | ||||| || | |||| | || | |
Db      948 CCAACCAAGCCTGGACTCAATGACCTCTATGATGACTAAAAAAA 991; and

```

and for chalcone isomerase see Jez J. *et al.* Nature Structural Biology, 2000; Vol. 7, No. 9, pp. 786-791 especially Figure 1.

Applicants' assertions that the prior art reference does not teach "a plant active in flavanol and anthocyanin biosynthesis" is incorrect. The reference teaches that 1-3 diphenylpropane flavonoid derivatives (i.e. flavonol and anthocyanin) are ubiquitous among plants species (col. 1 lines 17-28).

Applicant broadly claims transformed plants comprising unspecified fragments of unspecified length and identity of heterologous isoflavone synthase and chalcone reductase that retain activity; and transformed plants comprising unspecified fragments of unspecified length

Art Unit: 1638

and identity of heterologous isoflavone synthase, chalcone reductase and chalcone isomerase that retain activity; wherein the enzymes are encoded by polynucleotide sequences that hybridize to SEQ ID NO: 1, 3, and 5 under hybridization conditions of very low stringency.

U.S. Patent 7,038,113 teaches the production of daidzein in plants transformed with isoflavone synthase, chalcone reductase and chalcone isomerase (see claims and columns 6 line 32 to column 8 line 11; and especially column 14 lines 13 to 43) and that isoflavone synthase, chalcone reductase and chalcone isomerase encoding polynucleotides were known in the art; and thus the reference teaches all the limitations of claims 1-2, 22-25, 28-31 and 34-39.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

No claim is allowed.

Art Unit: 1638

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KALLIS whose telephone number is (571)272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell Kallis/
Primary Examiner, Art Unit 1638
April 8, 2008